

REPLACED BY  
ART 34 AMDT

- 16 -

**CLAIMS:**

1. A method of recovering juice or wine from marc comprising the steps of:
  - (i) diffusion extracting marc with an extraction liquid to provide a liquid  
5 portion containing matter extracted from the marc;
  - (ii) fractionating the liquid portion by reverse osmosis to provide a permeate  
and a residue;
  - (iii) recycling at least a portion of the permeate as extraction liquid; and
  - (iv) collecting at least a portion of the residue *for use as recovered juice or in*  
10 *recovered wine.*
2. A method according to claim 1, wherein water is recovered from the marc after  
extraction and the recovered water is recycled as extraction liquid.
- 15 3. A method according to claim 2, wherein water is recovered from the marc after  
extraction by pressing the marc and collecting the liquid pressings or by collecting water  
evaporated off the marc.
4. A method according to claim 3, wherein the extraction liquid comprises water.  
20
5. A method according to claim 4, wherein the liquid portion is filtered before the  
filtered liquid portion is fractionated by reverse osmosis.
6. A method according to claim 5, wherein the liquid portion is micro-filtered by  
25 using a cross-flow filter before being fractionated by reverse osmosis.
7. A method of recovering wine from marc according to any one of claims 1 to 6,  
wherein ethanol and optionally resveratrol are separated from the permeate before the  
remaining portion of the permeate is recycled as extraction liquid.

30

RECEIVED  
ART 34 ADJUT

- 17 -

8. A method according to claim 7, wherein ethanol separated from the permeate is combined with collected residue to provide recovered wine.
9. A method of recovering wine from marc according to claim 8, wherein tartrates are recovered from the residue before the remaining portion of the residue is collected.
10. A method according to claim 1, wherein the marc is extracted by using a counter current diffusion extractor.
11. A method according to claim 6, when used in the recovery of juice from white wine marc.
12. A method according to claim 9, when used in the recovery of wine from red wine marc.
13. A process for recovering wine from red wine marc comprising the steps of:
- (i) providing a stream of marc,
  - (ii) providing a stream of extraction liquid comprising at least water;
  - (iii) feeding the marc and extraction liquid streams into a continuous counter current diffusion extractor and counter current extracting the marc with the extraction liquid to provide a liquid stream containing matter extracted from the marc and a stream of spent marc;
  - (iv) recovering water from the stream of spent marc and feeding the recovered water into the extraction liquid stream;
  - (v) passing the liquid stream containing matter extracted from the marc through a filter and then fractionating the filtered liquid stream by reverse osmosis to provide a permeate stream and a residue stream;
  - (vi) splitting the permeate stream by using a continuous feed still to provide an ethanol stream and a remainder stream;
  - (vii) feeding the remainder stream into the extraction liquid stream;

PCT/AU2003/001110  
ART 34 AMDT

- 18 -

(viii) separating tartrates from the residue stream and combining the remaining residue stream with the ethanol stream to provide the recovered wine.

14. An apparatus for implementing the method according to one of claims 1 to 13  
5 comprising diffusion extractor for diffusion extracting marc with an extraction liquid to provide a liquid portion containing matter extracted from the marc and reverse osmosis device for fractionating the liquid portion by reverse osmosis to provide a permeate and a residue.
- 10 15. An apparatus according to claim 14, further comprising a press for recovering water from the marc after extraction with an extraction liquid.
16. An apparatus according to claim 14, further comprising an evaporator for recovering water from the marc after extraction with an extraction liquid.
- 15 17. An apparatus according to claim 14, further comprising a cross-flow filter for filtering the liquid portion provided by the extractor before fractionation by reverse osmosis.
- 20 18. An apparatus according to claim 14, further comprising a still for separating ethanol from the residue.
19. An apparatus substantially as hereinbefore described with reference to figures 3A, 3B, 4A and 4B.
- 25 20. A method for recovering juice or wine from marc substantially as hereinbefore described with reference to figures 3A, 3B, 4A and 4B.
21. Wine or juice recovered by using the method of claim 1 or process of claim 13.

30

Pat. 2003/001110  
Art. 50, PCT

- 19 -

22. A method of increasing wine production by respectively combining wine or juice recovered by the method of claim 1 or process of claim 13 with free-run and / or press obtained wine or juice.

5